

PENNSYLVANIA DEPARTMENT OF AGRICULTURE

Bureau of Plant Industry

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THE GRAPE SPRAY SCHEDULE

Grapes of a high quality and free from blemish may be grown anywhere in Pennsylvania if proper attention is given to their care and management. Removal and burning of dead vines and leaves, proper pruning and spraying, destruction of weeds, cultivation and the addition of necessary fertility are essential to success. Bagging of grapes is practical only in small plantings.

The more important diseases of the grape are black rot, downy mildew, and powdery mildew; the more important insect pests are the rose chafer, flea beetle, grape berry moth, grape root worm and grape leaf hopper.

The following sprays are important and should be applied at the exact time indicated.

1. To Control Black Rot and Flea Beetles.

For black rot and for flea beetle and other leaf feeders, spray when the new growth is 12 to 15 inches long. Use 4-4-50 Bordeaux mixture, to each 50 gallons of which is added $1\frac{1}{2}$ pounds of powdered arsenate of lead, $1\frac{1}{2}$ pounds commercial resin-fish-oil soap, or from one half to one gallon of home prepared resin-fish-oil soap. Substitute 2 pounds of powdered arsenate of lead and 2 pounds of wheat flour in this spray in place of the arsenate of lead and fish oil soap, if rose chafers are numerous.

2. To Control Black Rot, Grape Rootworm and Rose Chafer.

For black rot, the adults of the grape vine root worm and other leaf eating insects, spray immediately after the blossoms fall, using the same materials as in No. 1.

3. To Control Black Rot and Grape Berry Moth.

Two weeks after No. 2 (just as the berries begin to touch in the cluster) make a very thorough application of the same material as in No. 1. This is a very important spray for the control of black rot and the grape berry moth.

4. To Control Late Infections of Black Rot.

Ten days to two weeks after No. 3, spray with 4-4-50 Bordeaux and 1½ pounds resin-fish-oil soap.

Should the grape vine leaf hopper be troublesome, an application of nicotine sulfate containing 40 per cent nicotine diluted one (1) part to 1000 parts of Bordeaux, or three-eighths ($\frac{3}{8}$) of a pint in 50 gallons of Bordeaux should be made. Apply with a nozzle throwing a driving spray, and be sure to hit the undersides of the leaves. With power spray rigs, arrange a boom, using nine disc nozzles in all, four on either side of the row and one directly over the row. The two lower nozzles should be about one foot from the ground and directed up and forward at an angle of 45 degrees. The other side nozzles are set about one foot apart at 45 degree angles upward and forward. The side arms should be 6 feet long. The top nozzles are directed downward. Maintain a pressure of at least 250 pounds. The time to make this spray depends upon the season and location. In the southern half of the state the time is about the last week in June or the first of July. In the northern part about two weeks later.

Any Bordeaux stains which may be on the grapes at ripening time may be removed by dipping the clusters in a solution of vinegar and water, half and half, and then rinsing in clear water.

For further details see bulletin 433 of the Pennsylvania Department of Agriculture.